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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/610,668 07/05/00 BRIDGES

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MMC2/0307

EXAMINER

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KERVEROS, J

ART UNIT	PAPER NUMBER
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2858

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DATE MAILED: 03/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/610,668	BRIDGES ET AL.	
	Examiner	Art Unit	
	James C Kerveros	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 October 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) Interview Summary (PTO-413) Paper No(s) _____.
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other: _____

**METHOD AND APPARATUS FOR SUB-MICRON IMAGING
AND PROBING ON PROBE STATION**

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1, 2, 4, 6-9, 15-18, 23-27, 30 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Lindsay et al. (US-PAT-NO: 5983712), ISSUED: November 16, 1999, in view of Applicant's admitted prior art. Lindsay discloses a probe apparatus of an atomic force microscope for profiling the properties of a surface at nanometer resolution and for probing the properties of individual molecules attached to that surface.

3. Regarding Claims 1, 2, 4, 23 and 30 the probe apparatus, comprises:

- (a) A first positioning unit actuator (1, FIG. 3A, prior art) held in a fixed position.
- (b) A probe arm cantilever assembly (2, FIG. 3A) attached to the first positioning unit 1.
- (c) A second positioning unit flexible cantilever (3, FIG. 3A) attached to the probe arm

(d) A cantilever tip (4, FIG. 3A) attached to the second positioning unit. Furthermore, Lindsay discloses in FIG. 9 a cantilever probe 48 which is attached to a scanning element such as a piezoelectric scanning transducer 50 which holds the probe above the surface 52 of sample DUT 54.

(e) A motion sensitive detector (60, FIG. 9) for detecting the position of the cantilever probe. Laser beam (58, FIG. 9) is reflected from the back of cantilever probe 48 into a position so that deflections of the probe may be detected and recorded.

4. Lindsay in the prior art discloses a piezoelectric actuator 1, which is used to sweep the stiff end of a cantilever 2 by some amount (labeled X._{sub}D) toward the sample S as show in FIG. 1A.

5. Regarding Claims 6 –9, 15-18, 24 -27 and 33, Lindsay, in the BACKGROUND OF THE INVENTION, discusses obtaining an image of the UUT, through mapping the topography of the UUT surface by scanning the probe over the surface of the UUT.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the

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subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 5, 10-14, 19-22, 28, 29, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al. (US-PAT-NO: 5983712), as applied to claims 1, 23 and 30 above, in further view of Hellemans et al. (US-PAT-NO: 6091248)

ISSUED: July 18, 2000.

8. Regarding Claims 3, 5, 10-14, 19-22, 28, 29, 31 and 32, Lindsay fails to disclose the identical structural and electrical measurement limitations of the claimed invention. However, as noted above Lindsay discloses obtaining images of the UUT through electrical measurement. Furthermore, Hellemans discloses a method for measuring the electrical potential in a semiconductor element comprising an electrometer (10, FIG. 2, Hellemans) which measures the electrical potential through probe (3) of the semiconductor device UUT (1). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used an electrometer electrical measurement technique in the device of Lindsay for the reasons of obtaining images of the surface of a UUT.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES C. KERVEROS at (703) 305-1081 from 9:00 AM to 5:00 PM, or the examiner's supervisor, SAFET METJAHIC at (703) 308-1436.

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The fax phone number for the organization is (703) 308-7722. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist at (703) 305-4900.

James C Kerveros
Examiner
Art Unit 2858

JCK/File
February 20, 2001



Safet Metjahić
Supervisory Patent Examiner
Technology Center 2800